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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/521,532

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Mathias Muth

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7590

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BANK OF AMERICA PLAZA

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EXAMINER

BUTLER, PATRICK NEAL

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/521,532	<b>Applicant(s)</b> MUTH ET AL.	
	<b>Examiner</b> Patrick Butler	<b>Art Unit</b> 1791	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 February 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,5-8 and 30-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-8 and 30-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 6- 8, and 30-33 rejected under 35 U.S.C. 103(a) as being unpatentable over Karami (US Patent No. 3,965,906) in view of Ciaccia et al. (US Patent No. 4,257,842) and Giacometti (European Patent Application 0 598 970 A1) as evidenced by Mish et al. (*Merriam-Webster's Collegiate Dictionary*, page 840).

With respect to Claim 1, Karami teaches of making a perforated web 32, 39 (a method for the manufacture of a perforated nonwoven) by passing needles 46 of an upper roll 44 through the webs 32, 39 (comprising directing a nonwoven between a first roller having an outer surface defining an outer circumference and ... perforation means extending outwardly from said outer surface about the entire outer circumference and a second roller having an outer surface covered) into the bristles 50 or soft surface such as rubber of a lower roll 48 (engaging the perforation means through the nonwoven and into the ... material of the second roller and displacing ... with the perforation means and forming perforations in the nonwoven while also forming contours in the ... material) (see col. 3, line 45 through col. 4, line 1 and fig. 1).

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Karami teaches a lower roller that is bristles 50 or soft surface such as rubber (see col. 3, line 45 through col. 4, line 1) but does not expressly teach that the soft surface is a felt material.

Ciaccia teaches that a conforming roller opposing a shaping roller is paper-wool (a second roller having an outer surface covered by a felt material) (see col. 3, lines 47-52), which is a felted material (felt) (see Mish et al. *Merriam-Webster's Collegiate Dictionary*, page 840, <sup>1</sup>**paper 1 a** (1) : a felted sheet of usually vegetable fibers laid down on a fine screen from a water suspension).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Ciaccia's paper-wool roller in the process of Karami because Karami teaches using other materials as soft surfaces (see Karami, col. 3, lines 55-57) and Ciaccia's surface allows it to be complementary to the action of the shaping roller (see Ciaccia, col. 3, lines 33-60).

Karami teaches that heating is done after rather than during perforation (see col. 7, lines 1-11). Thus, Karami does not appear to expressly teach heating perforation means extending outwardly.

Giacometti teaches maintaining the outer surface of a perforation means at a suitable temperature to facilitate the processing of the web material via a heating means (heated perforation means) (see col. 3, lines 51-56 and col. 5, lines 52-56).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to heat the perforation means as taught by Giacometti in Karami's

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perforation process in order to facilitate the plastic deformation of the web material (see Giacometti, col. 3, lines 51-56).

With respect to Claim 3, Karami teaches that heating is done after rather than during perforation (see col. 7, lines 1-11). Thus, the temperature during perforation is necessarily below that of the melt temperature of the nonwoven or a decomposition temperature of the material.

Alternatively, if it is held that Karami does not explicitly teach that the temperature of the perforation means is within the claimed range (e.g., below that of the melt temperature of the nonwoven or a decomposition temperature of the material), in this regard, Giacometti teaches maintaining the outer surface of a perforation means at a suitable temperature to facilitate the processing of the web material via a heating means (below a melt temperature of the nonwoven or a decomposition temperature of the material) (see col. 3, lines 51-56 and col. 5, lines 52-56). As such, Giacometti recognizes that the temperature of the perforation means is a result-effective variable. Since the temperature of the perforation means is a result-effective variable, one of ordinary skill in the art would have obviously been motivated to determine the optimum temperature of the perforation means applied in the process of Karami through routine experimentation based upon facilitate the plastic deformation of the web material (see Giacometti, col. 3, lines 51-56).

With respect to Claims 6 and 8, Karami teaches passing needles 46 of an upper roll 44 through the webs 32, 39 forming permanent perforations (the perforation means displace fibers of the nonwoven; whereby the fibers are compacted and an opening in

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the nonwoven is stabilized) into the bristles 50 or soft surface such as rubber of a lower roll 48 (push against the felt material; perforation means en into the felt material; fibers are at least in part drawn in sympathy into the felt material) (see col. 3, line 45 through col. 4, line 1 and fig. 1).

With respect to Claim 7, Karami teaches of making a perforated web 32, 39 by passing needles 46 of an upper roll 44 through the webs 32, 39 (see col. 3, line 45 through col. 4, line 1 and fig. 1) but does not expressly teach that when the perforation means engage, fibers are at least in part forced out of the nonwoven, whereby the fibers for a structure which correspondingly exhibits a geometry of the perforation means, which, after the nonwoven has run through the first and second rolls, rises from the surface of the nonwoven.

Giacometti teaches that protuberances P1, P2 from the cylinder 7 break through the web N and partially detach material that remains connected to the web (that when the perforation means engage, fibers are at least in part forced out of the nonwoven, whereby the fibers for a structure which correspondingly exhibits a geometry of the perforation means, which, after the nonwoven has run through the first and second rolls, rises from the surface of the nonwoven) (see col. 5, line 52 through col. 6, line 7 and fig. 7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form partially detached material from the web as taught by Giacometti in the process of making a perforated web as taught by Karami in order to

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obstruct backflow and direct liquid to the interior of a formed product (see Giacometti, col. 6, lines 14-28).

With respect to Claim 30, Karami in view of Ciaccia does not appear to explicitly teach that the thickness of felt material is within the claimed range (e.g., greater than 5 mm).

However, in this regard, Karami teaches that the lower roller is sized sufficiently to enable it to receive points of perforator's 42 upper roll 44 (see col. 3, lines 38-65). As such, Karami recognizes that the thickness of felt material is a result-effective variable. Since the thickness of felt material is a result-effective variable, one of ordinary skill in the art would have obviously been motivated to determine the optimum the thickness of felt material applied in the process of Karami in view of Ciaccia through routine experimentation based upon the lower roller's size being sufficient to receive the points of perforator's 42 upper roll 44.

With respect to Claim 31, Karami teaches 4-1000 mesh, such as 144 mesh, as the perforator pattern (see col. 7, lines 17-31), which would be 3-200,000 perforations per  $\text{cm}^2$ , such as 3210 perforations per  $\text{cm}^2$ , which would meet the limitations of the claim (8-25 per  $\text{cm}^2$ ):

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Mesh (perforations per linear inch)	Calculated surface density (Mesh * Mesh)		
	per in <sup>2</sup>	per cm <sup>2</sup>	per cm <sup>2</sup>
4	16	2.48	2
144	20,736	3,214.09	3,210
1,000	1,000,000	155,000.31	200,000
			(expressed in original significant figures)

However, if Karami's mesh is held to expressly teach the claimed perforation density, then Karami does not appear to explicitly teach that perforation density is within the claimed range (e.g., 8-25 per cm<sup>2</sup>).

However, in this regard, Karami teaches perforating with relatively close spacing according to desired comfort (see col. 7, lines 17-31). As such, Karami recognizes that perforation density is a result-effective variable. Since perforation density is a result-effective variable, one of ordinary skill in the art would have obviously been motivated to determine the optimum perforation density applied in the process of Karami through routine experimentation based upon achieving a surface providing user comfort (see col. 7, lines 17-31).

With respect to Claim 32, Karami teaches using needles 46 of the upper roll 44 (see col. 3, line 45 through col. 4, line 1 and fig. 1).

With respect to Claim 33, Karami teaches a process of pulling the material between upper roll 44 and lower roll 48 through the production line at least by belt 28 and rollers 30 (see col. 3, lines 24-65 and fig. 1).



Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karami (US Patent No. 3,965,906) in view of Ciaccia et al. (US Patent No. 4,257,842) and Giacometti (European Patent Application 0 598 970 A1) as evidenced by Mish et al. (*Merriam-Webster's Collegiate Dictionary*, page 840) as applied to claims 1, 3, 6- 8, and 30-33 above, and further in view of McGrew (US Patent No. 5,521,030).

With respect to Claim 5, Karami in view of Ciaccia teach a method of making an embossing roller of felt as previously described, which would be shrinkable but does not expressly teach that the felt is a hose covering.

McGrew teach that the material of a shaping roller should be seamless (see col. 1, lines 44-63 and col. 2, lines 44-63), which would be a hose configuration.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use McGrew's teaching of seamless rollers in the process of Karami in order to provide cleaner shaped products (see McGrew, col. 2, lines 58-60).

Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karami (US Patent No. 3,965,906) in view of Ciaccia et al. (US Patent No. 4,257,842) and Giacometti (European Patent Application 0 598 970 A1) as evidenced by Mish et al. (*Merriam-Webster's Collegiate Dictionary*, page 840) as applied to claims 1, 3, 6- 8, and 30-33 above, and further in view of Wagner (DE 198 56 223 A 1, with US Patent No. 6,739,024 B1 relied upon for translation and citation).

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With respect to Claim 34, Karami in view of Ciaccia teach a method of making an embossing roller of felt as previously described but does not expressly teach guiding the non-woven around the surface of the first roller over a looping angle of greater than 90 ° with the perforation means remaining engaged with the nonwoven.

Wagner teaches producing a structured non-woven by engaging a positive roller 10a with the web in contact with approximately half the roller as the rollers are stacked (see abstract; col. 5, lines 11-31; and fig. 2), which would meet the Claimed limitation of greater than 90 °.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to contact the non-woven as taught by Wagner in the process of Karami in order to define the material as desired (see Wagner, col. 5, lines 11-31).

Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karami (US Patent No. 3,965,906) in view of Ciaccia et al. (US Patent No. 4,257,842), Giacometti (European Patent Application 0 598 970 A1), and McGrew (US Patent No. 5,51,030) as evidenced by Mish et al. (*Merriam-Webster's Collegiate Dictionary*, page 840) as applied to claim 5 above, and further in view of Wagner (DE 198 56 223 A 1, with US Patent No. 6,739,024 B1 relied upon for translation and citation).

With respect to Claim 35, Karami in view of Ciaccia teach a method of making an embossing roller as previously described but does not expressly teach that the felt is the outer surface of a metal roller.

Wagner teaches providing engagement rollers by applying the engaging surface material to a metal core (see col. 2, line 61 through col. 3, line 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to layer to rolls as taught by Wagner in Karami's process of shaping with rolls in order to cheaply customize the roller by simply customizing the outer layer (see Wagner, col. 2, line 61 through col. 3, line 4).

### ***Response to Arguments***

Applicant's arguments filed 17 February 2010 have been fully considered, but they are not persuasive.

Applicant argues with respect to the 35 U.S.C. § 103(a) rejections. Applicant's arguments appear to be on the grounds that:

- 1) Karami fails to teach the newly claimed limitation of heating perforation means.
- 2) Karami may not be combined to teach heating perforation means because heating members 58 must have a cutout portion to prevent heating which enlarges perforations at these locations.
- 3) Giacometti's perforator heats to cause partially detached material, which would contradict Karami's avoidance of heating to enlarge perforations.
- 4) The combination must be predictable, which has not been set forth.

The Applicant's arguments are addressed as follows:

- 1) Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new grounds of rejection as necessitated by the newly claimed limitation of heated perforation means.

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1) Karami is not relied upon for heating perforation means extending outwardly. Giacometti teaches maintaining the outer surface of a perforation means at a suitable temperature to facilitate the processing of the web material via a heating means (heated perforation means) (see col. 3, lines 51-56 and col. 5, lines 52-56).

2 and 3) Karami's teaching of heating is to a degree of causing the film 32 to fuse to the underlying pad 32 (see col. 5, line 64 through col. 6, line 5). It is this degree of heating that is discussed to significantly enlarge openings 33 (see col. 5, line 64 through col. 6, line 5). The Examiner notes that the since the claim does not require heating to degree to cause fusing and Giacometti's heating is not to degree to cause fusing. Thus, consequences of such heating appear to be moot.

4) As recited above, it would have been obvious to one of ordinary skill in the art at the time the invention was made to heat the perforation means as taught by Giacometti in Karami's perforation process in order to facilitate the plastic deformation of the web material (see Giacometti, col. 3, lines 51-56). Thus, plastic deformation would be reasonably predicted by the combination.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Butler whose telephone number is (571) 272-8517. The examiner can normally be reached on Mon.-Thu. 7:30 a.m.-5 p.m. and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. B./

Examiner, Art Unit 1791

/Christina Johnson/

Supervisory Patent Examiner, Art Unit 1791